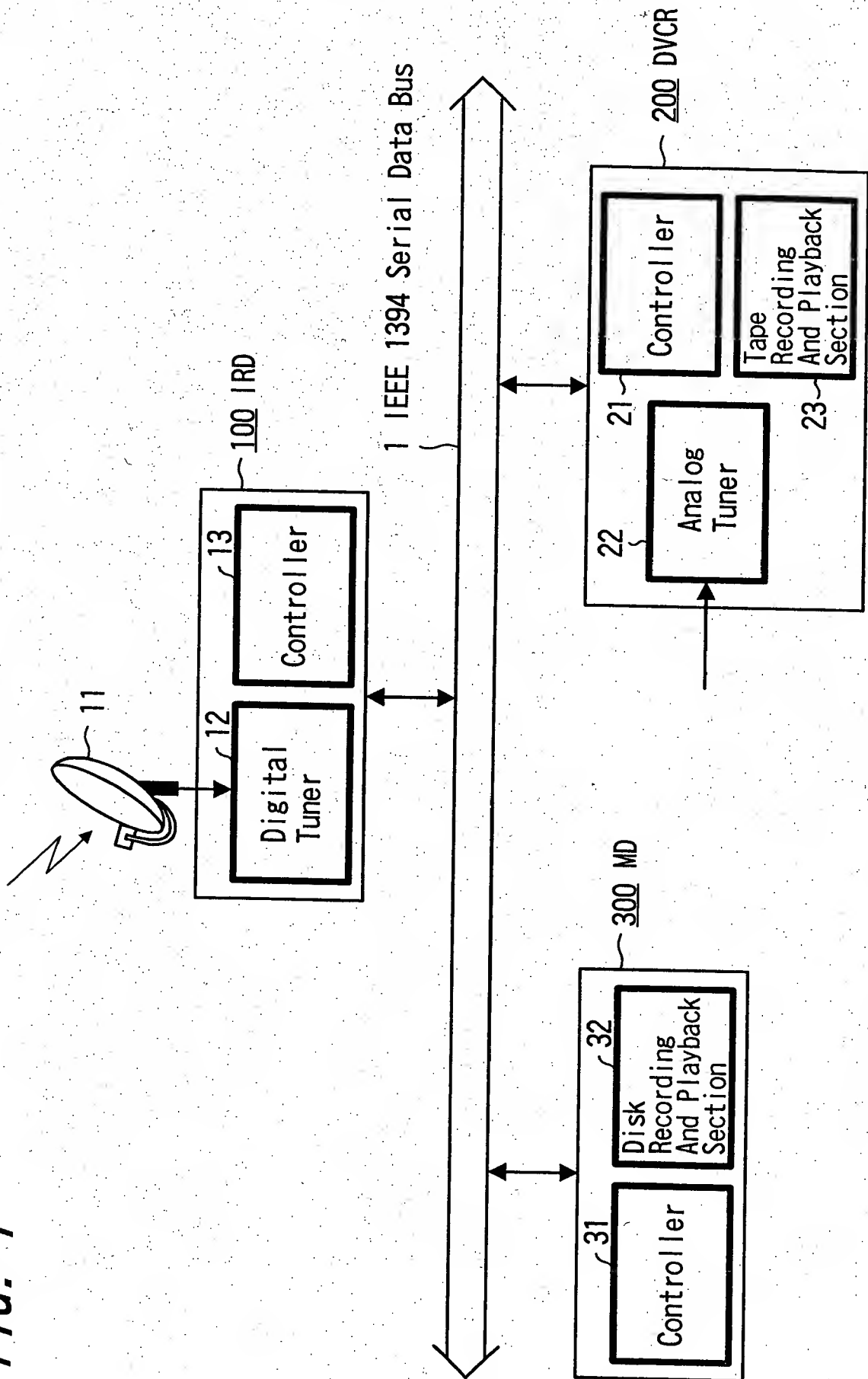


FIG. 1



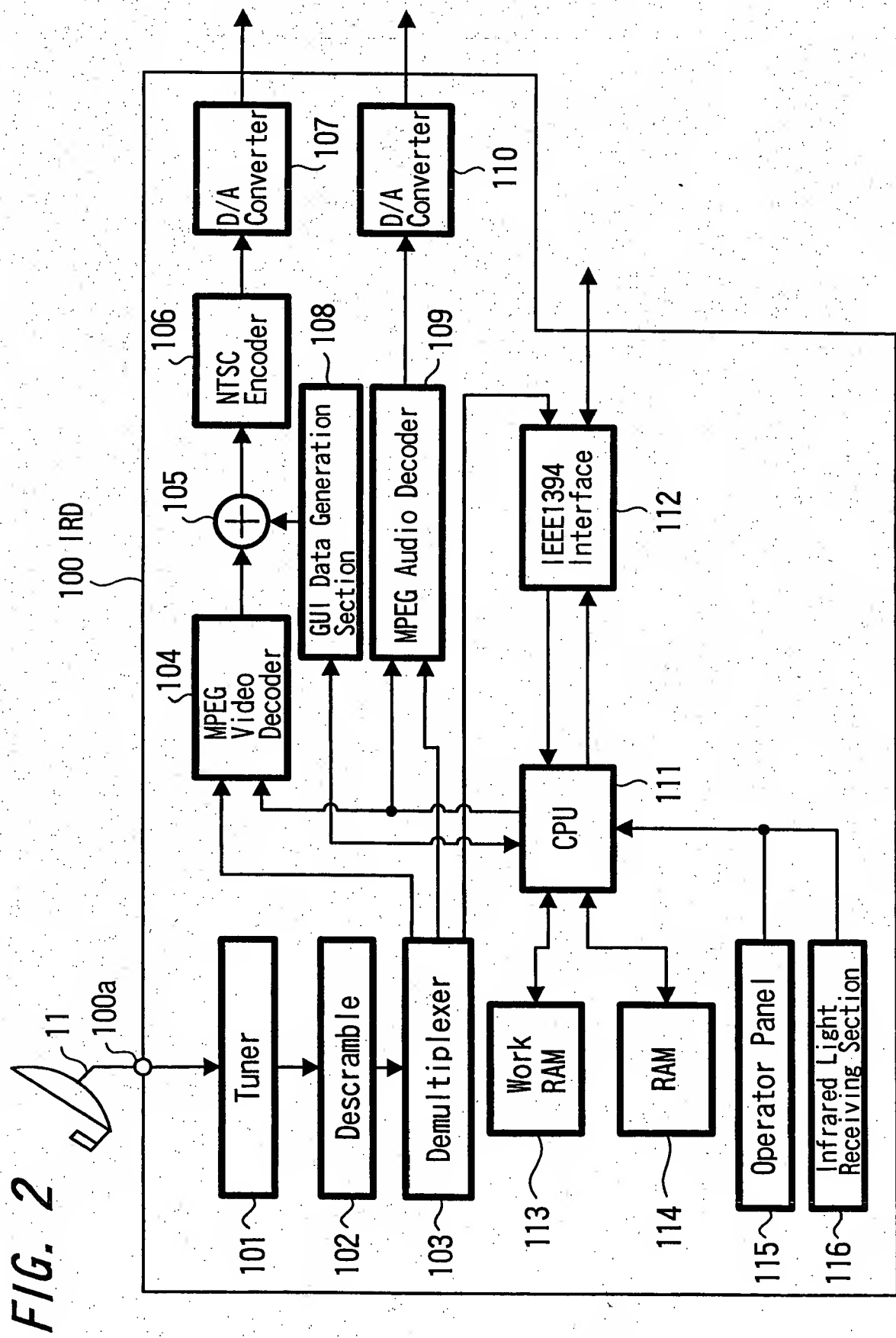


FIG. 3

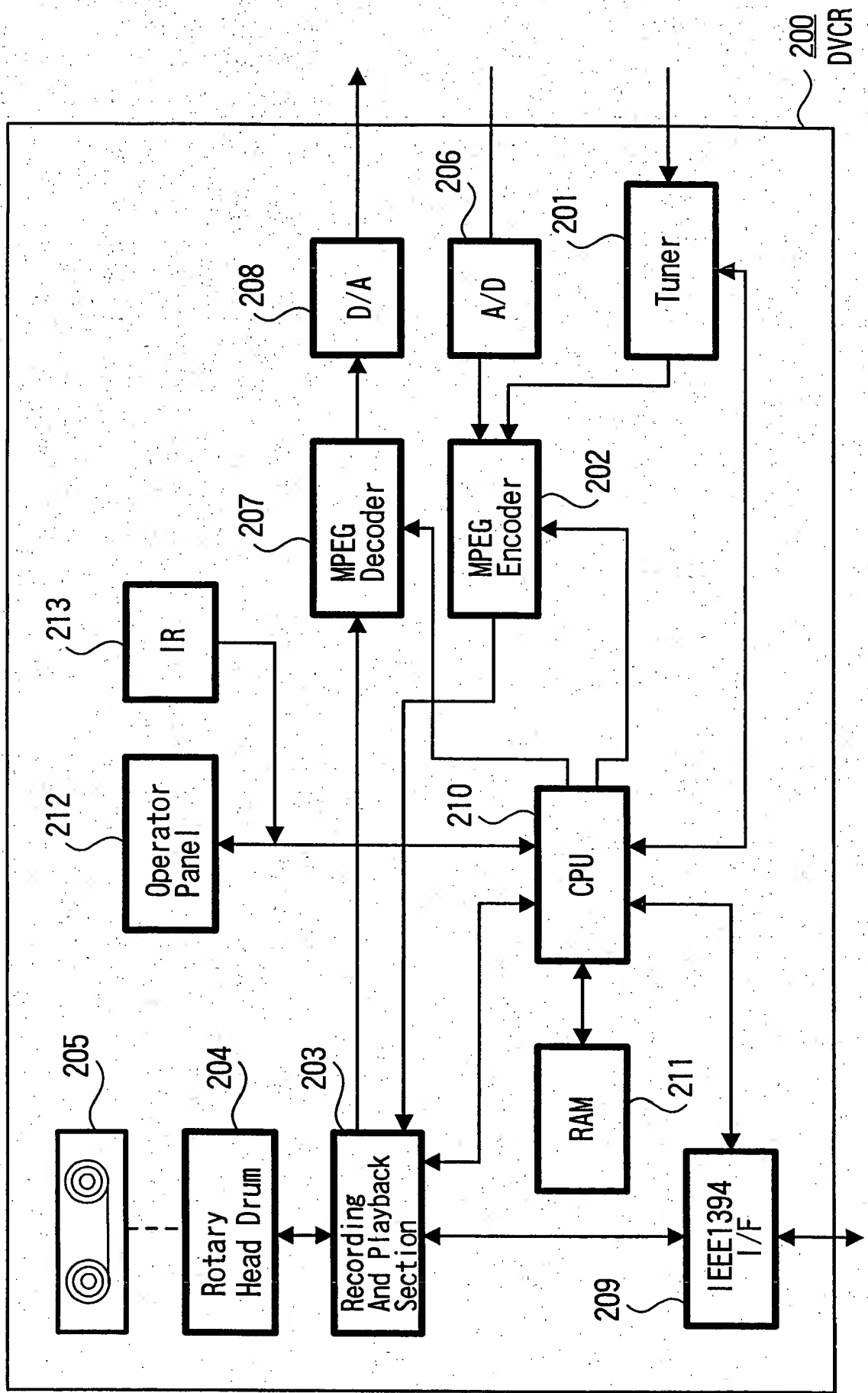


FIG. 4

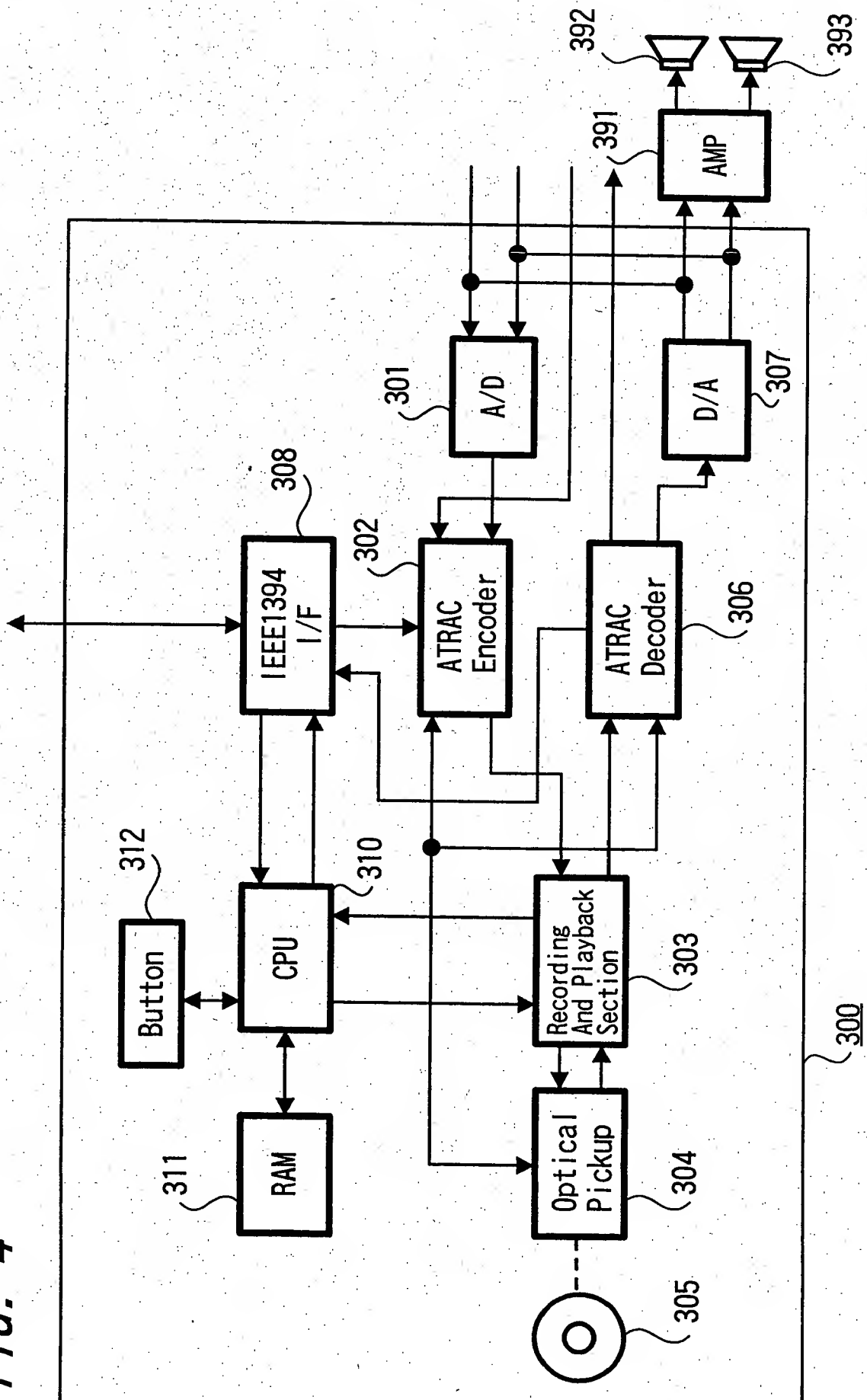


FIG. 5

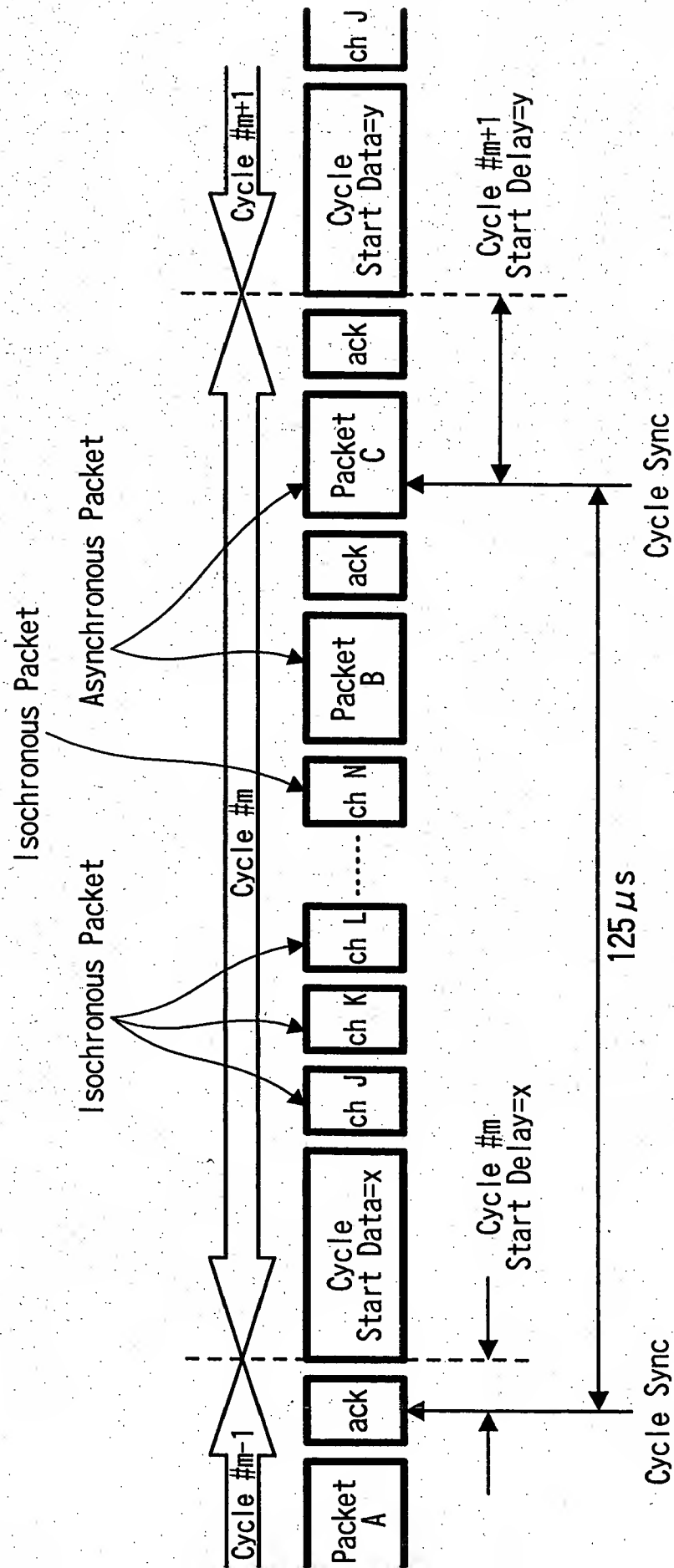


FIG. 6

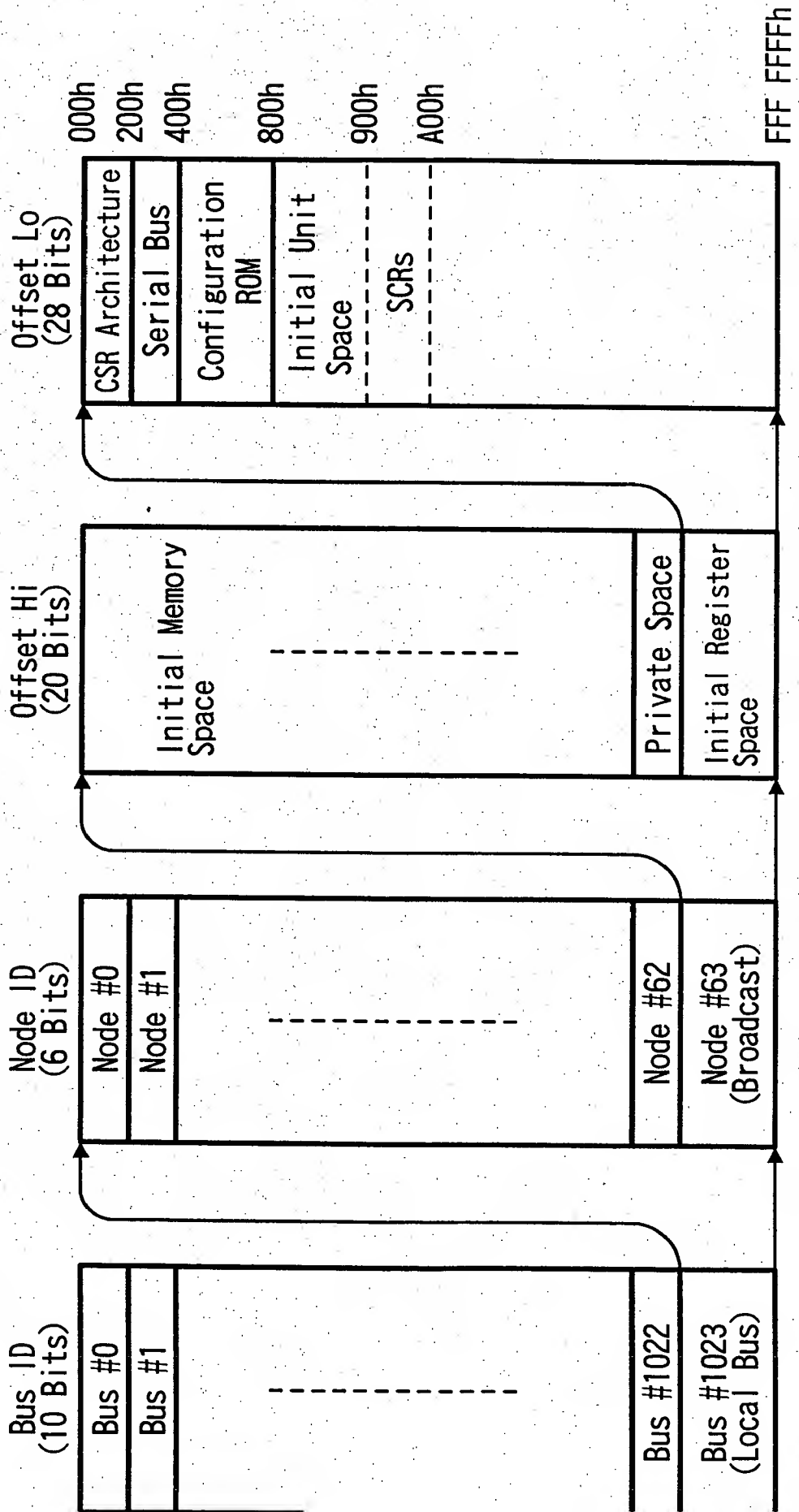


FIG. 7

Offset	Name	Function
000h	State Clear	State And Control Information
004h	State Set	State Clear Bit Is Set
008h	Node ID	16-Bit Node ID Is Indicated
00Ch	Reset Start	Command Reset Is Started
018-01Ch	Split Timeout	Maximum Split Time Is Prescribed
200h	Cycle Time	Cycle Time
210h	Busy Timeout	Retry Limit Is Prescribed
21Ch	Bus Manager	Bus Manager ID Is Indicated
220h	Band Usage Situation	Band Which Can Be Assigned to Isochronous Communication Is Indicated
224h-228h	Channel Usage Situation	Usage Situation of Each Channel Is Indicated

FIG. 8

900h	Output Master Plug Register
904h	Output Plug Control Register #0
908h	Output Plug Control Register #1
⋮	⋮
97Ch	Output Plug Control Register #30
980h	Input Master Plug Register
984h	Input Plug Control Register #0
988h	Input Plug Control Register #1
⋮	⋮
9FCh	Input Plug Control Register #30

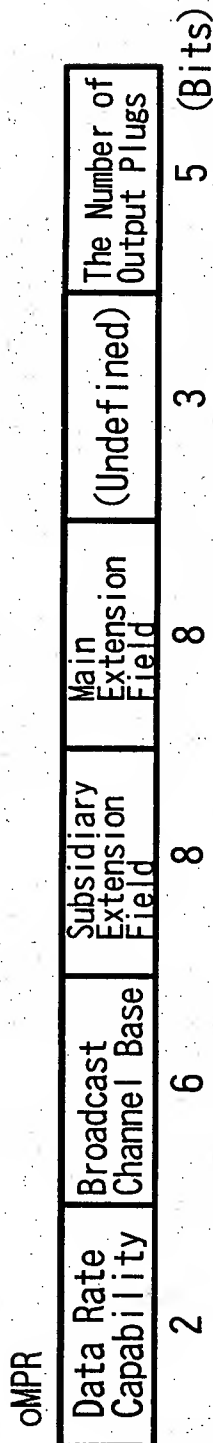


FIG. 9A

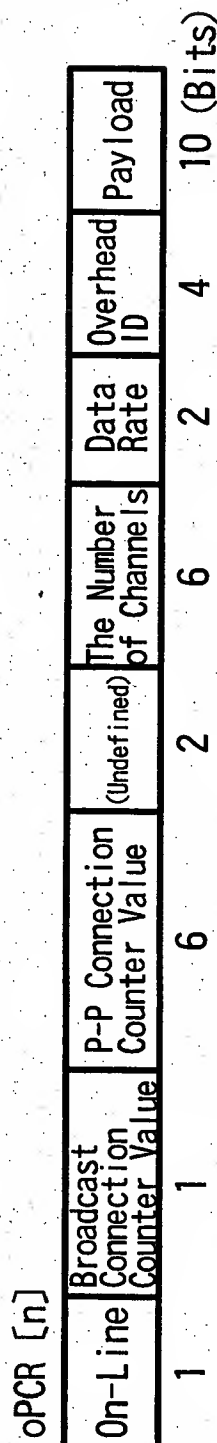


FIG. 9B

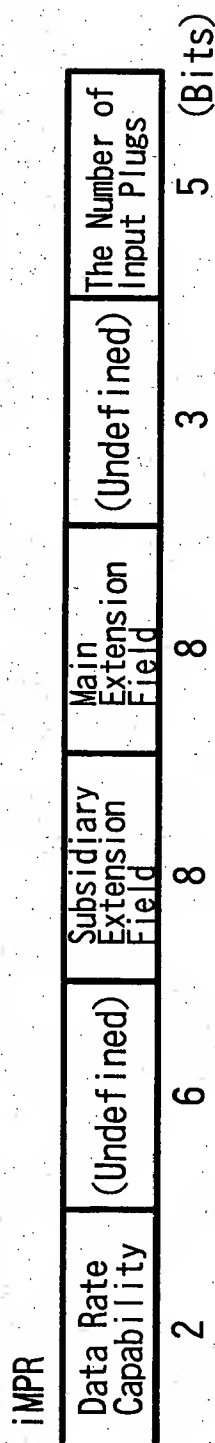


FIG. 9C

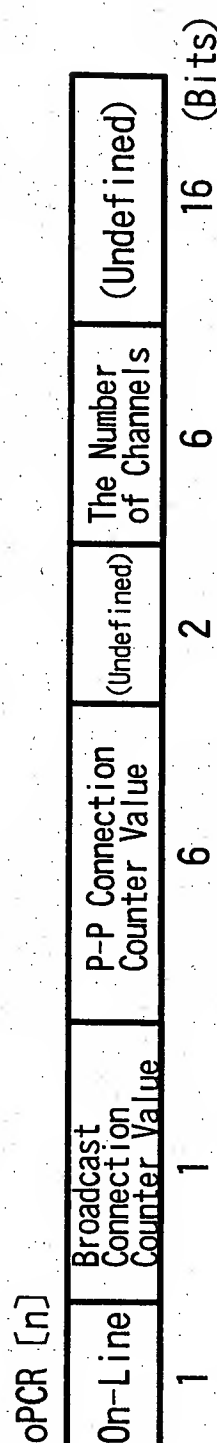


FIG. 9D

FIG. 10

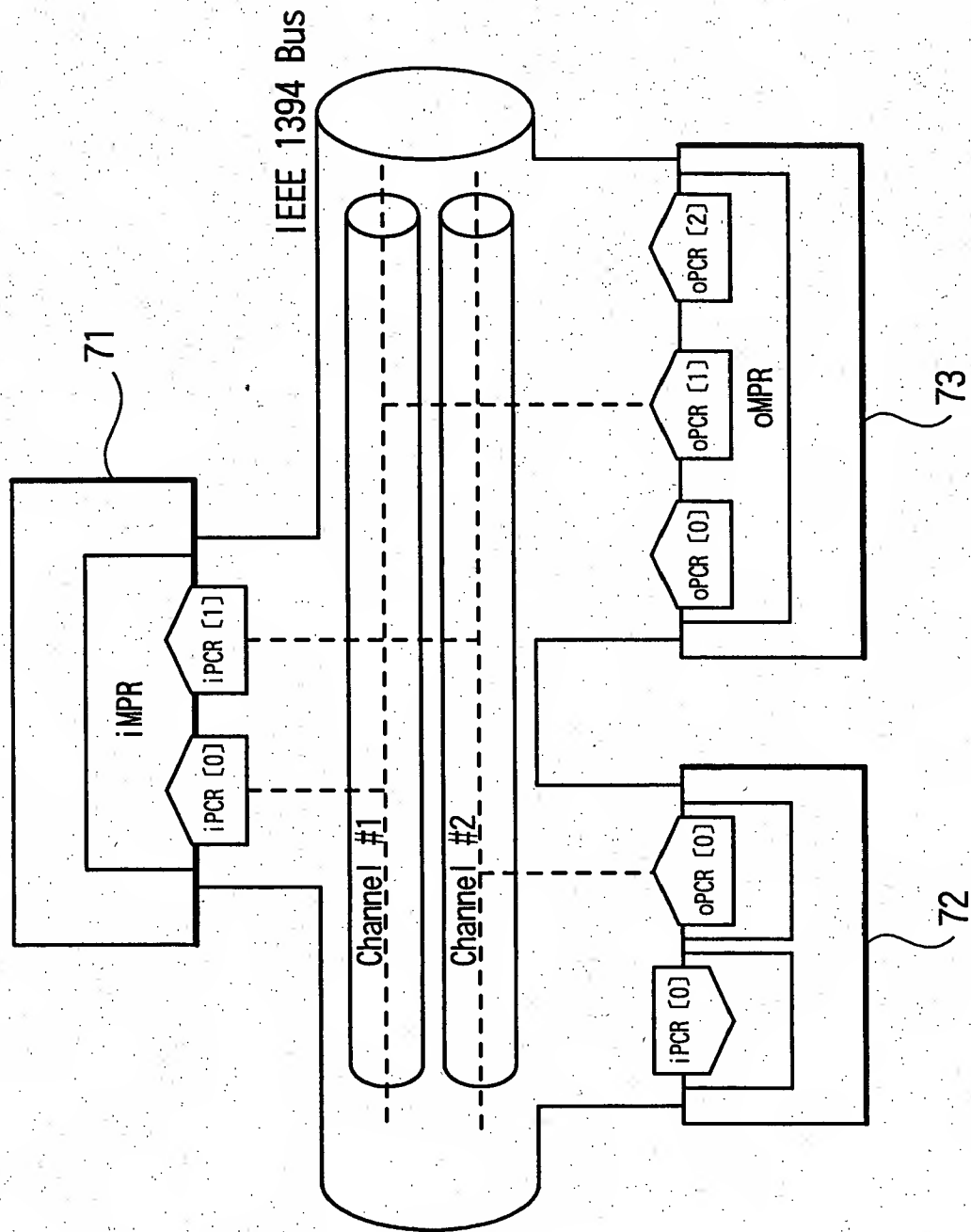


FIG. 11

FIG. 11

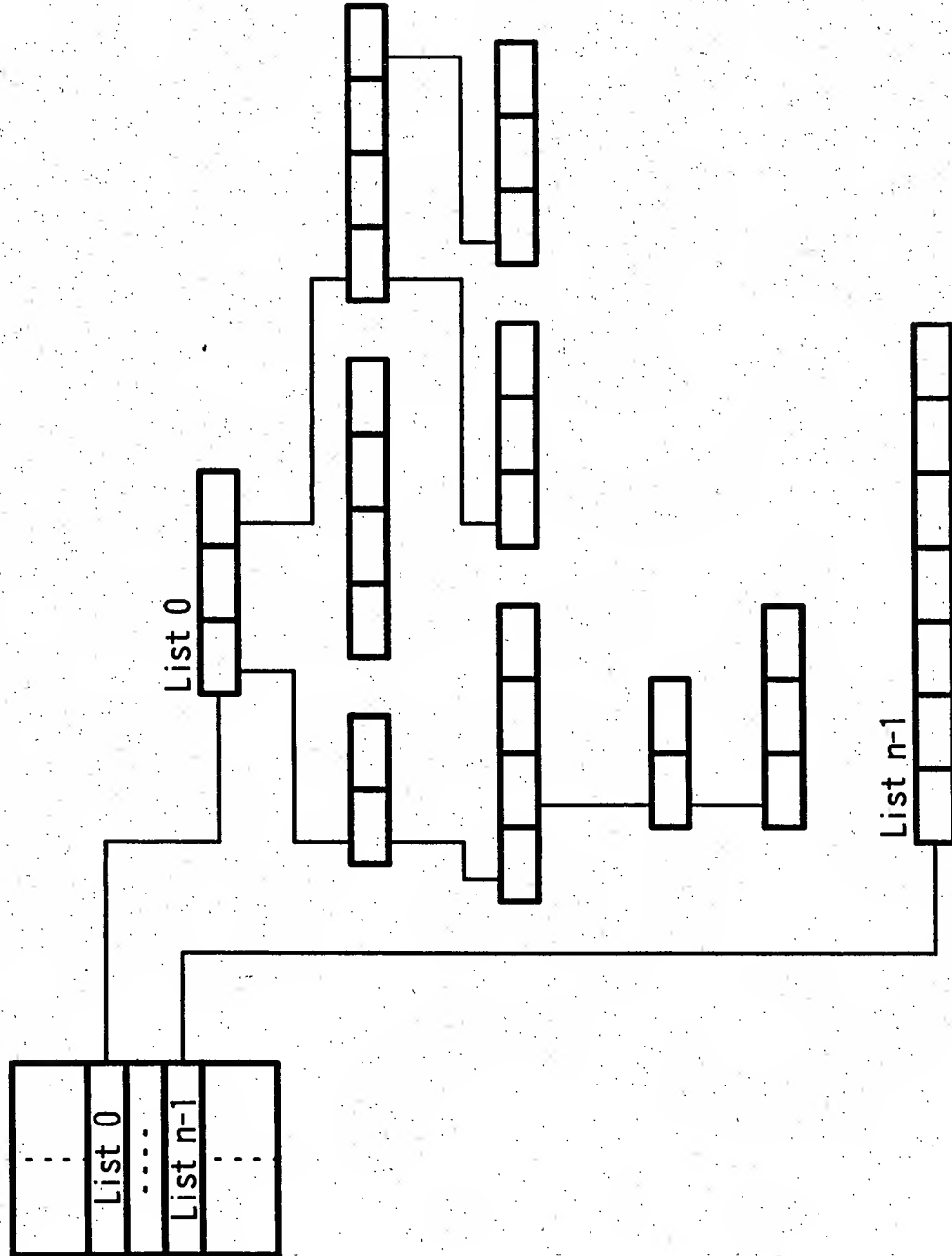


FIG. 12

General Subunit Descriptor	
address	Contents
00 00 ₁₆	Descriptor Length
00 01 ₁₆	
00 02 ₁₆	Generation ID
00 03 ₁₆	List ID Size
00 04 ₁₆	Object ID Size
00 05 ₁₆	Object Position Size
00 06 ₁₆	The Number of Root Object Lists (n)
00 07 ₁₆	
00 08 ₁₆	Root Object List ID 0
⋮	
⋮	⋮
⋮	Root Object List ID n-1
⋮	
⋮	Subunit Dependent Data Length
⋮	
⋮	Subunit Dependent Guide
⋮	
⋮	
⋮	Manufacturer Dependent Data Length
⋮	
⋮	Manufacturer Dependent Guide
⋮	
⋮	

FIG. 13

Assignment of Generation ID Values	
Generation ID	Meaning
00 ₁₆	AV/C General Version 3.0 Standard
Other Values	Undefined

FIG. 14

Assignment of List ID Values	
Value	List
0000 ₁₆ 0FFF ₁₆	Undefined
1000 ₁₆ 3FFF ₁₆	Value Specific to Subunit Type
4000 ₁₆ FFFF ₁₆	Undefined
1 000 ₁₆	Value Specific to Subunit Type

FIG. 15

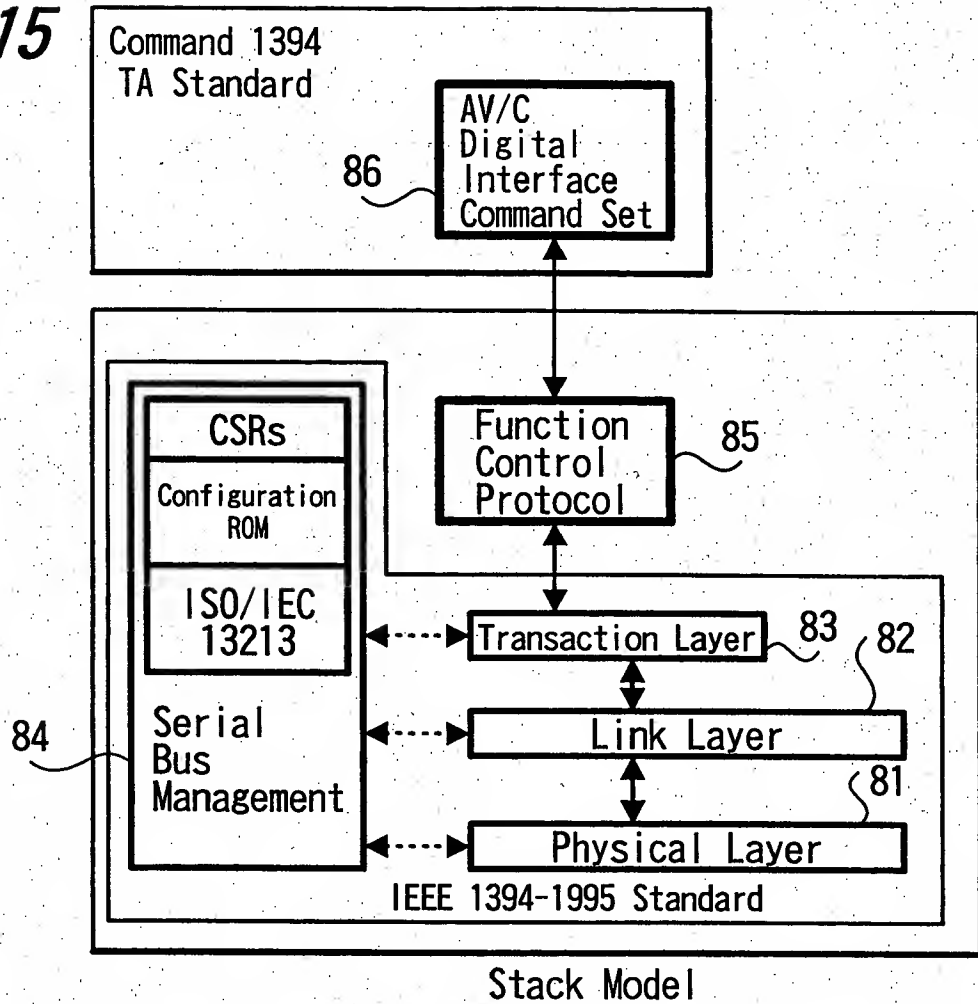
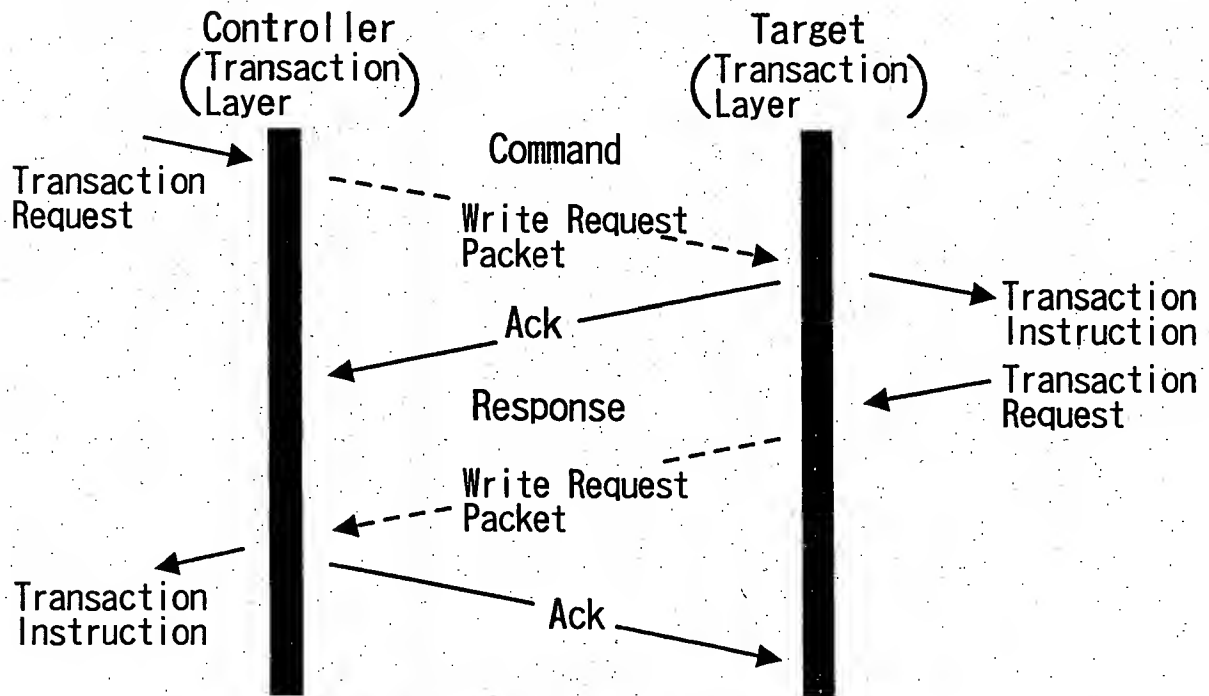


FIG. 16



Command And Response of FCP

FIG. 17

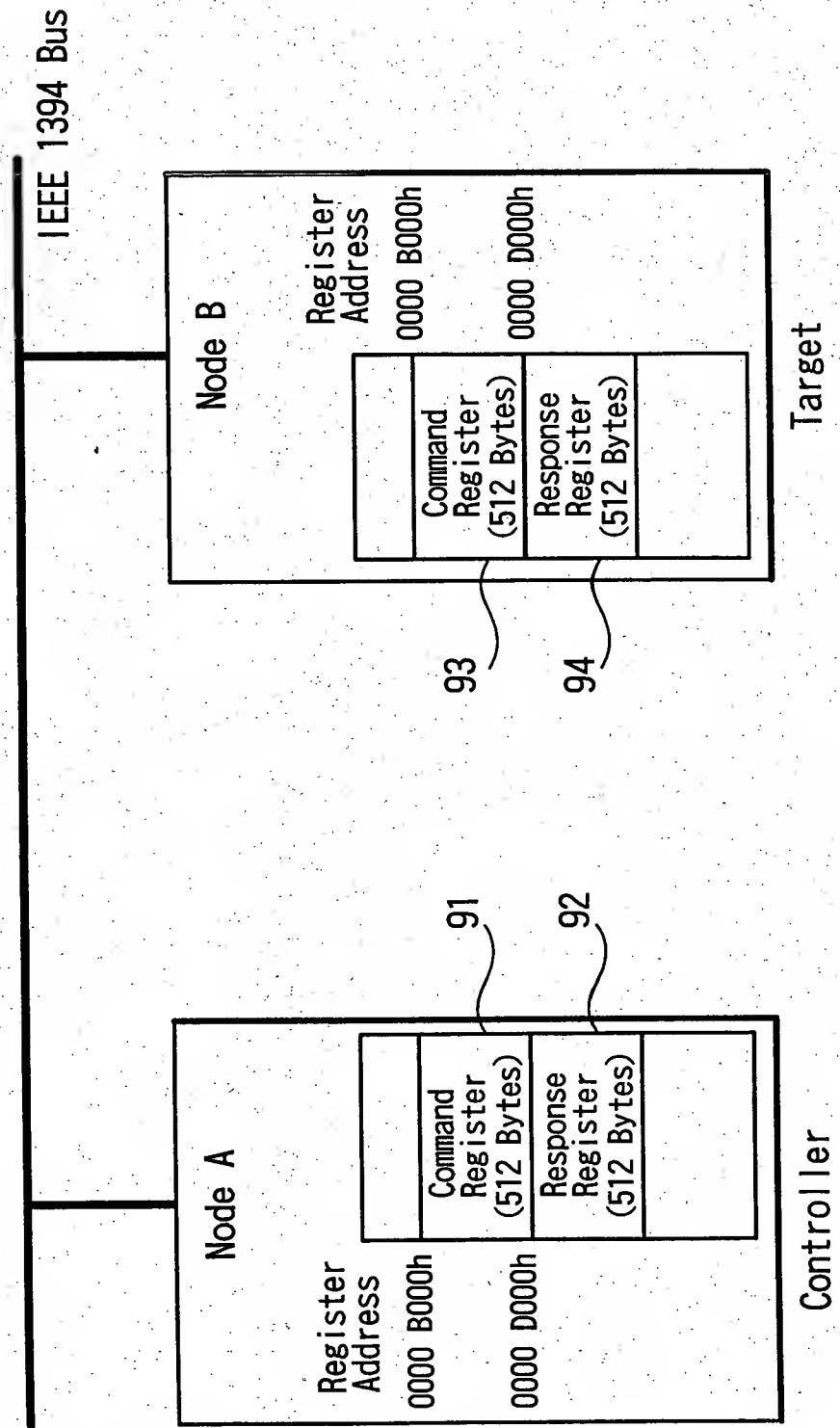


FIG. 18

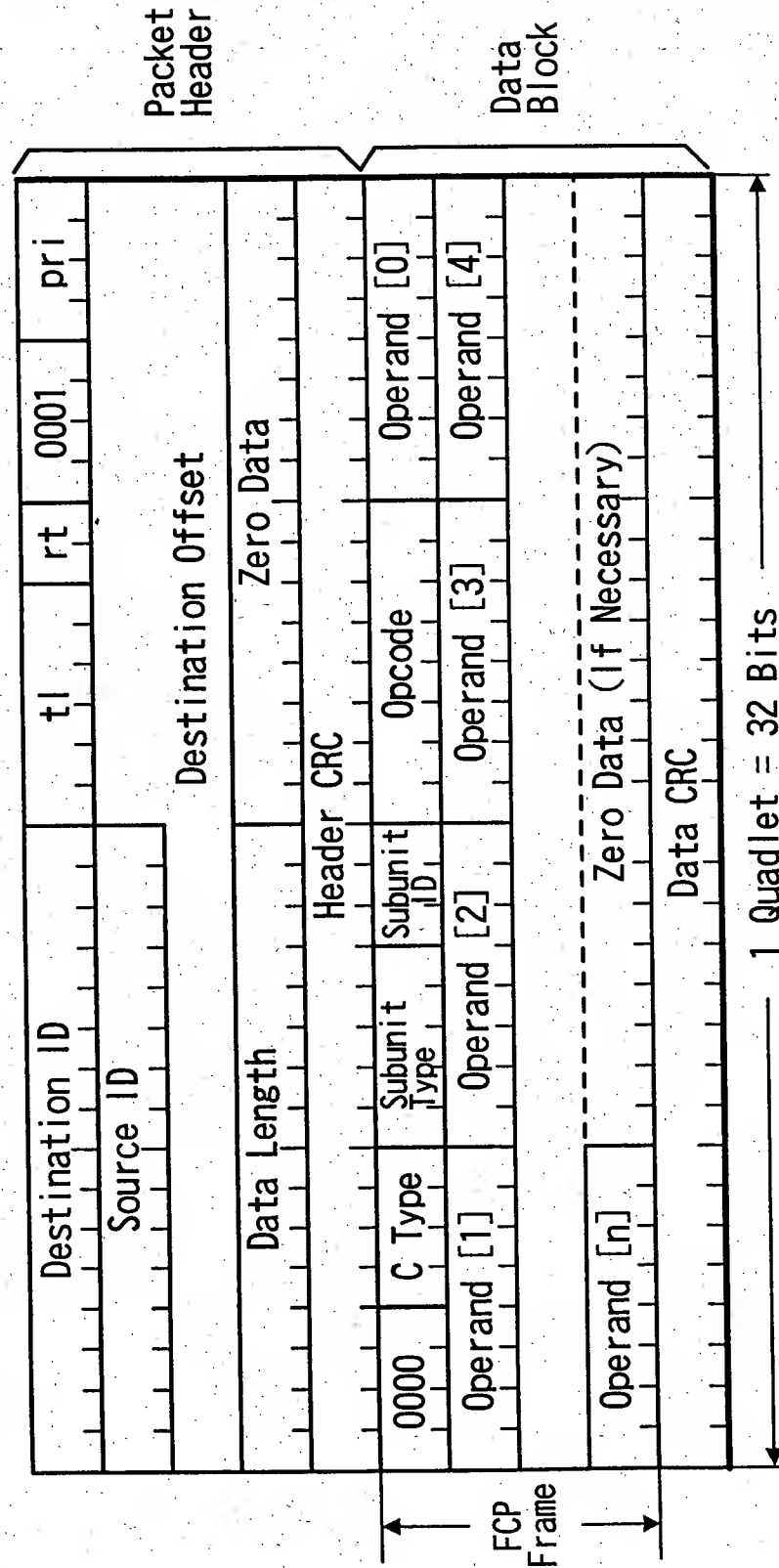


FIG. 19

Command Type/Response		Subunit Type		Opcode: Operation Code		
Command	0000	Control	00000	Video Monitor	00h	Vendor Dependent Value
	0001	Status	?		50h	Search Mode
	0010	Specific Inquiry	00011	Disk Recorder/Player	51h	Time Code
	0011	Notify			52h	ATN
	0100	General Inquiry	00100	Tape Recorder/Player	60h	Memory Open
	0101	(Undefined)			61h	Memory Read
Response	?				62h	Memory Write
	0111		00101	Tuner	C1h	Load
	1000	Not Implemented	00111	Video Camera	C2h	Record
	1001	Accepted	01010	BBS	C3h	Playback
	1010	Rejected	11100	Vendor Dependent Value	C4h	Rewind
	1011	In Transition	11101	Undefined	?	?
	1100	Implemented/Stable	11110	(Specific Subunit) (Type)		
	1101	State Change				
	1110	(Undefined)	11111	Unit		

FIG. 20A

Tape Recorder Case of ID0		Playback		Forward Direction	
AV/C	Control	Subunit Type=	id=	Opcode=	Operand=
CTS= 0000	C Type= 0000	00100	000	C3h	75h

FIG. 20B

Tape Recorder Case of ID0		Playback		Forward Direction	
AV/C	Control	Subunit Type=	id=	Opcode=	Operand=
CTS= 0000	Accepted	00100	000	C3h	75h

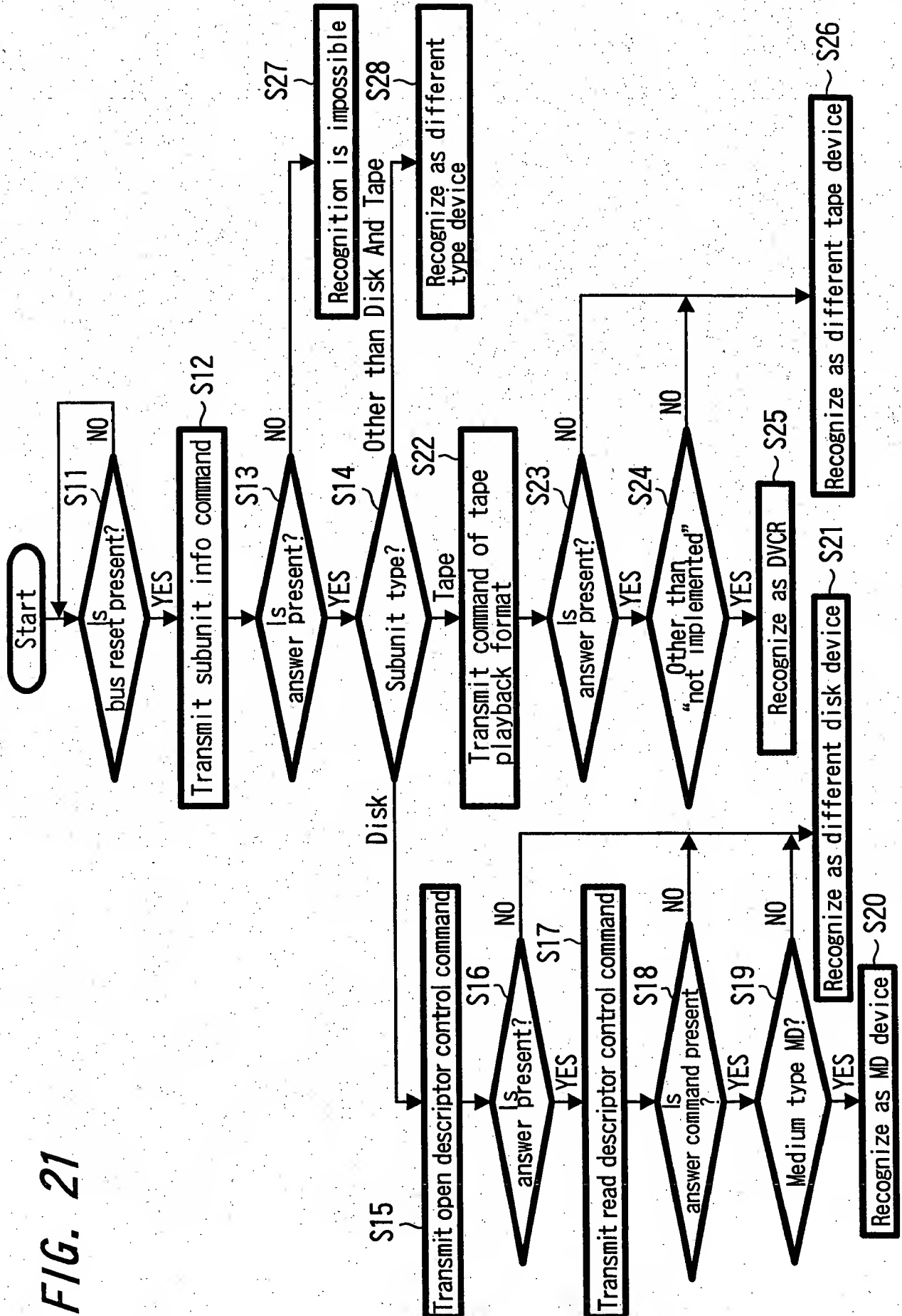


FIG. 22

	msb						lsb
Opcode	Subunit Info						
Operand[0]	0	Page			0	Extension Code	
Operand[1]	FF ₁₆						
...							
Operand[4]							

Subunit Info Status Command Format

FIG. 23

	msb						lsb
Opcode	Subunit Info						
Operand[0]	0	Page			0	Extension Code	
Operand[1]	Page Data						
...							
Operand[n]							

Subunit Info Response Format

FIG. 24

	msb						lsb
Opcode	Unit Info						
Operand[0]	FF ₁₆						
...							
Operand[4]							

Unit Info Status Command Format

FIG. 25

	msb						lsb
Opcode	Unit Info						
Operand[0]	0716						
Operand[1]	Unit Type					Unit	
Operand[2]	Company ID						
Operand[3]							
Operand[4]							

Unit Info Response Format

FIG. 26

Subunit Type	Meaning
00000	Video Monitor
00011	Disk Recorder/Player
00100	Tape Recorder/Player
00101	Tuner
00111	Video Camera
11100	Vendor Dependent Value

Subunit Type Encoding

FIG. 27

	msb						lsb
Opcode	Open Descriptor(08 ₁₆)						
Operand[0]	Data for Descriptor Identification						
Operand[1]							
:							
:							
:	Subfunction						
:	(Undefined)						

Open Descriptor Command

FIG. 28

	msb						lsb
Opcode	Read Descriptor(09 ₁₆)						
Operand[0]	Data for Descriptor Identification						
Operand[1]							
:							
:							
:	Read Result Status						
:	(Undefined)						
:	Data Length						
:							
:							
:	Address						
:							

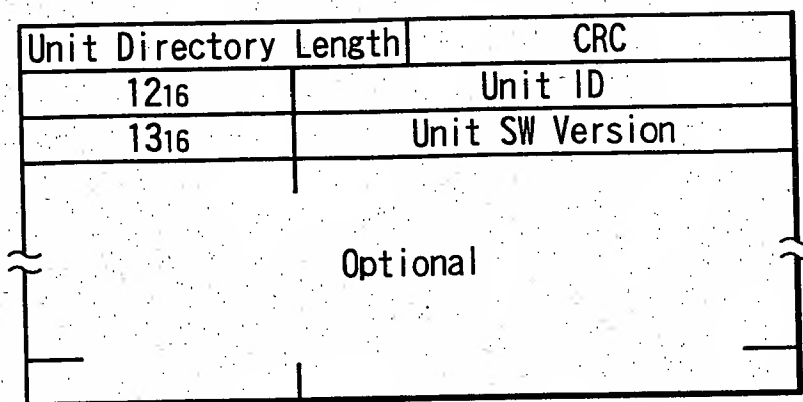
Read Descriptor Command

FIG. 29

Disc Subunit Identifier Descriptor	
Address	Contents of Description
00 00 ₁₆	Descriptor Length
00 01 ₁₆	
00 02 ₁₆	Generation ID
00 03 ₁₆	Size of List ID
00 04 ₁₆	Size of Object ID
00 05 ₁₆	Size of Object Position
00 06 ₁₆	The Number of Root Object Lists(n)
00 07 ₁₆	
00 08 ₁₆	Root Object List ID [0]
:	
:	:
:	Root Object List ID [n-1]
:	
:	Disk Subunit Dependent Data Length
:	
:	Disk Subunit Dependent Information
:	
:	Vendor Dependent Data Length
:	
:	Vendor Dependent Information
:	

Disc Subunit Identifier Descriptor

FIG. 33



Unit Directory

FIG. 34

Unit ID	Unit SW Version	Protocol And Command Set
aaaaa	AAAAA	1394 TA-AV/C Standard
bbbbb	BBBBB	1394 TA-Common Application Language(CAL)
ccccc	CCCCC	1394 TA-Europe Home System(EHS)
ddddd	DDDDD	ANSI X3T10-SBP-2

Correspondence of Protocol And Command Set

FIG. 35

msb	CTS code			lsb	CTS
0	0	0	0	0	AV/C
0	0	0	0	1	CAL
0	0	1	0	0	EHS
0	0	1	1	1	(Undefined)
1	1	0	1	1	
1	1	1	0	0	Vendor Dependent Value
1	1	1	1	1	CTS

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523</
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Key ID	Name	Type Value	Directory
1	Descriptor Text	DL	Any One Is Possible
2	Bus Info	IDL	Root
3	Vendor	IDL	Any One Is Possible
4	Hardware Version	I	Any One Is Possible
5-B16	Undefined		
C16	Capability of Node	I	Root
D16	Node ID	L	Root
E16-1016	Undefined		
1116	Unit	D	Root or Instance
1216	Identification ID	I	Any One Is Possible
1316	Software Version	I	Any One Is Possible
1416	Dependent Info	DL	Any One Is Possible
1516-1616	Undefined		
1716	Model ID	I	Any One Is Possible
1816	Instance	D	Root or Instance
1916	Keyword	L	Any One Is Possible
1A16	Feature	D	Instance or Unit
1B16-2F16	Undefined		
3016-3716	Definition of Bus Standard		
3816-3F16	Directory Dependent Definition		

Definition of Key

DESCRIPTION OF REFERENCE NUMERALS

- 1 ... Bus line of IEEE 1394 scheme
- 11 ... Antenna
- 12 ... Digital tuner
- 13 ... Controller in IRD
- 21 ... Controller in DVCR
- 22 ... Analog tuner
- 23 ... Tape recording and playback section
- 31 ... Controller in MD
- 32 ... Disk recording and playback section
- 71, 72, 73 ... AV device
- 81 ... Physical layer
- 82 ... Link layer
- 83 ... Transaction layer
- 84 ... Serial bus management
- 85 ... FCP
- 86 ... AV/C command set
- 91, 93 ... Command register
- 92, 94 ... Response register
- 100 ... IRD (Integrated Receiver Decoder)
- 101 ... Tuner
- 102 ... Descramble circuit
- 103 ... Demultiplexer
- 104 ... MPEG video decoder
- 105 ... Adder
- 106 ... NTSC encoder

- 108 ... GUI data generation section
- 109 ... MPEG audio decoder
- 110 ... Digital to analog converter 110
- 111 ... Central processing unit (CPU)
- 112 ... Interface section
- 113 ... Work RAM
- 114 ... RAM
- 115 ... Operator panel
- 116 ... Infrared light receiving section
- 200 ... DVCR (Digital Video Cassette Recorder)
- 203 ... Recording and playback section
- 204 ... Rotary head drum
- 205 ... Tape cassette
- 206 ... Analog to digital converter
- 207 ... MPEG decoder
- 208 ... Digital to analog converter
- 209 ... Interface section
- 210 ... Central processing unit (CPU)
- 211 ... RAM
- 212 ... Operator panel
- 213 ... Infrared light receiving section
- 201 ... Tuner
- 202 ... MPEG encoder
- 203 ... Recording and playback section
- 204 ... Rotary head drum
- 205 ... Tape cassette
- 206 ... Analog to digital converter

- 207 ... MPEG decoder
- 208 ... Digital to analog converter
- 209 ... Interface section
- 210 ... Central control unit (CPU)
- 211 ... RAM
- 212 ... Operator panel
- 213 ... Infrared light receiving section
- 300 ... MD device (Mini disc device)
- 301 ... Analog to digital converter
- 302 ... ATRAC encoder
- 303 ... Recording and playback section
- 304 ... Optical pickup
- 305 ... Disk
- 306 ... ATRAC decoder
- 307 ... Digital to analog converter
- 308 ... Interface section
- 310 ... Central processing unit (CPU)
- 311 ... RAM
- 312 ... Button
- 391 ... Amplifier device
- 392, 393 ... Speaker